

Abstract

This invention relates to a method for coating at least one substrate with one or more layers in a process chamber, in particular of a CVD installation. According to said method, starting materials, in particular in the form of organometallic reaction gases are introduced into the process chamber and their mass flow is controlled. In said chamber, the starting materials or reaction products thereof are deposited on layers on the substrate that is held by a temperature controlled substrate holder. During a coating cycle, which begins with the charging of the process chamber with the substrate or substrates and ends with the removal of the same according to a predetermined formula, the desired values of the process parameters, such as mass flows of the starting materials and temperature of the substrate holder, are set and the actual values for each substrate that correspond with the desired values of the process parameters are individually determined at intervals and are stored in a memory. During said coating cycle, or after each coating cycle, or after one or more subsequent processing steps carried out on a layer or on a layer system consisting of several layers, identifying layer characteristics, such as layer thickness and layer composition are determined and are stored by being allocated to the individualized data of the corresponding substrate. The actual values that have been obtained and the layer characteristics that have been determined for a plurality of layers deposited with the same formula are then correlated and correlation values are generated.